

# History and Philosophy of Science and Medicine

HIST / PHIL 3328  
Spring 2021 Syllabus

Thursdays 4-6:45pm

**Professor** Matthew J. Brown

**Email:** mattbrown@utdallas.edu

**Phone:** 972-883-2536

**Office Location and Hours:** Teams or Discord, by appointment

**Appointments:** <https://doodle.com/mm/matthewjbrown/book>

## Course Modality and Expectations

**Instructional Mode** Remote/Virtual - Synchronous online learning at the day and time of the class.

**Course Platform** eLearning and Discord. (If we find Discord doesn't work for us, we may move to Teams or Collaborate.)

**Expectations** All students are expected to do the weekly readings and turn in all assignments, and to participate in class discussion and group projects either synchronously or asynchronously. More details below under "Requirements."

**Asynchronous Learning Guidelines** Asynchronous students will have access to any lecture materials via written or video recorded versions of the lecture. They will be able to participate in asynchronous discussions and turn in all materials online.

## Course Description

Science plays an influential role in our society. As a social institution, it commands respect and social influence, as well as major sums of funding. Science, which we might construe broadly to include engineering and medical research, produces results that are greatly sought after, for both good and ill. The adjective "scientific" garners almost immediate respectability to whatever it is applied, and, in some circles, it is a prerequisite for being taken seriously. At the same time, science sometimes generates major social controversies. To many it also bespeaks alienation, abstraction, recklessness, and a void of meaning. Some even deride science as mere ideology and power-mongering, as sexist, racist, or elitist.

Science, as a human and social phenomenon, is open to interpretation and critique; as a result, it stands in need of explanation, elaboration, justification, limitation, or change. History and philosophy of science attempt to understand how and why science works, to explain its successes and uncover its failures, to interpret its results, and to discover, what, if any, are its limits; in other words, to think critically about science. Historians and philosophers of science also try to situate science in the broader scheme of human activities, culture, and social institutions, as well as its interplay with cognitive, social, political, and moral values.

In this course we will explore classic and contemporary works in the fields of history and philosophy of science. We will investigate the nature of the scientific process and the scientific method, and explore how science changes. We will try to understand the interplay between science

and values, and issues concerning the role of science in policy and personal decision making. These are not merely abstract or academic concerns, but ones of great social relevance. To show this relevance, we will explore many applications of these ideas that touch on the current COVID-19 global pandemic, from understanding the origins of epidemiology, to the philosophical issues connected with medical research, disease screening, and vaccinations.

### Student Learning Objectives

1. Students will demonstrate knowledge of the key works, historical methods, and the philosophical frameworks and debates that constitute history and philosophy of science and medicine (HPS).
2. Students will demonstrate critical thinking about the nature and cultural role of science and medicine.
3. Students will engage in interpretation of key episodes in the history of science and medicine and critically assess competing interpretations.
4. Students will demonstrate close reading skills through engaging key texts in HPS.
5. Students will demonstrate effective written and oral communication skills in articulating philosophical arguments and historical interpretations.
6. Students will develop skills of collaboration and communication with peers in pursuit of research and analysis.
7. Students will apply their knowledge of HPS to relevant contemporary issues.

### Schedule of Topics

Readings and assignment due dates available via eLearning.

Date	Topic	Readings
1/21	Introduction; What is HPS?	
1/28	The Scientific Process; History of Epidemiology	Goldstein & Goldstein, Snow on Cholera
2/4	Scientific Paradigms and Revolutions	Kuhn
2/11	Scientific Method; The Galileo Case I	Feyerabend, Against Method, Intro & 1-7
2/18	Scientific Method; The Galileo Case II	Feyerabend, Against Method, Ch 8-14
2/25	The Case Against Method	Feyerabend, Against Method, Ch 15-16
3/4	Science and Society	Feyerabend, Against Method, Ch 17-20
3/11	Interpreting the Chemical Revolution	Goldstein & Goldstein, Heat; Chang
3/18	<i>Spring Break</i>	
3/25	Scientific Racism	Smedley; Gould
4/1	Values in Science I: Inference & Risk	Okruhlik; Douglas
4/8	Values and Disease Screening	Kourany & Fernandez-Pinto; Plutynski
4/15	Vaccines and Public Trust in Science	Goldenberg
4/22	Evidence in Medicine	Solomon, Stegenga, Bluhm
4/29	Values in Science II: Concepts & Claims	Dupre; Alexandrova
5/6	Race in Medical Research	Andreasen

## Video Lectures

This course will have short, weekly, pre-recorded video lectures that you should watch before attending the synchronous class discussion. These lectures provide important context about the readings and situate them within the larger historical movements of philosophy in the period. The first 30 minutes of our “official” class time will be set aside so you have time to watch the lecture.

## Synchronous Class Discussion

Class discussion will begin at 4:30pm, half an hour after our “official” start time, to provide time to watch and engage with the video lecture. The primary purpose of class discussion will be to collaboratively dig more deeply into the ideas and arguments from the reading, as well as to interrogate the broader historical and philosophical context. We will engage in several types of activities in this part of class, including small-group breakout sessions and full group discussion.

## Requirements and Grades

### Main Graded Assignments

1. Discussion Questions
2. Participation Points
3. Book or Journal Review
4. Final Project (*Podcast Assignment* or *Take-Home Essay Exam*)

### Grading

This course uses a form of grading based in adult learning theory called “specifications grading.” On that theory, adults learn better in a flexible and low-threat but interesting and challenging learning environment. High expectations are important for your success. This course creates such an environment and expectations, allowing you to direct your learning in a way that meets your personal learning objectives. Every assignment is simply graded “satisfactory/unsatisfactory,” though “satisfactory” here is more closely associated with competence or mastery than barely passing (more like 80% than 50%). The conditions for satisfactory work will be clearly specified for each assignment. There will be *no partial credit*. Every passing grade shows some level of genuinely competent work.

The following table shows the number or score one needs to get in order to receive the grade in question.

Assignment / Grade	A	B	C	D
Discussion Questions (#)	6	5	3	1
Participation points (#)	10	8	5	0
Book or Journal Review (score)	S	U	0	0
Final Project (one or the other)				
- Podcast Assignment (score / 5)	5	3	2	1
- Take-Home Essay Exam (score / 5)	5	4	3	2

The final project assignments will have rubrics with 5 components; each element is scored satisfactory/unsatisfactory.

## Tokens

Some flexibility is added to the course via the “token” system. You each begin the semester with 2 tokens. At the end of the semester, tokens can be *spent* in the following way:

- Free participation points
- For 3 tokens, have 1 unsatisfactory Discussion Question count as satisfactory
- For 5 tokens, unsatisfactory Review counts as satisfactory.
- For 5 tokens, 1 free point on final project.
- 5 tokens convert to a + grade.

Tokens can be *earned* in the following ways:

- Exemplary performance on review or final project
- 1 token per 3 excess Participation points above grade level

Example: You have 4 satisfactory discussion questions, 12 participation points, a satisfactory journal review, and 4 points on your final project. Your extra participation points above the 8 required for a B earn you 1 token, for a total of 3 tokens. These are used to change your score on a discussion question that you turned in from satisfactory to unsatisfactory, giving you the minimum needed to meet the specifications for a B.

Your tokens will be assigned automatically in whatever way gives you the highest possible grade for the class. You do not have to personally keep track of them.

## Assignment Descriptions

### Discussion Questions

Each week you will have the opportunity to submit one or two discussion questions about the day’s readings. You don’t need to submit questions every week; you’ll be able to earn credit up to 6 times during the semester for your questions.

The questions should be substantive and specific. They should be directed towards the claims and evidence presented in the readings, the arguments and reasoning that connect them, and the larger issues that are involved. As part of stating the question, you should give context, such that anyone in the class could fully understand the question. This means that generally each will be 3-4 sentences long (sometimes longer). You should feel free to add quotations to your question for additional context, though quotes should not count towards the 3-4+ sentences guideline.

Questions should aim at analysis, synthesis, or evaluation according to Bloom’s Taxonomy. They should not ask about basic comprehension or applications, nor should they express basic agreement or disagreement with the readings.

### Book / Journal Reviews

Working together in groups of 2-3, you will write a 2-3 page review of a work of scholarship in HPS, either an important book or a recent journal article, and make a 10-15 minute class presentation on it. You must pick either a book from a provided list or a paper from the most recent issue (or the issue just before that) of one of the journals on a list of major science studies journals. You should (1) summarize the argument of the work; (2) describe the type of research done to produce the work, its methodology or approach; (3) engage with it by presenting a supporting argument, raising an objection, or posing a serious and specific interpretive difficulty with it.

You must have your article approved by the instructor ahead of time, and you must make an appointment to discuss your presentation outline the week before your presentation.

*Asynchronous students will have to pre-record their review presentation and share the link at least 2 hours before class time on the week they are scheduled to present.*

### **Podcast Assignment**

You will synthesize the ideas and arguments you are learning in the class by crafting a 7-10 minute audio or video podcast episode about a particular issue in the history and philosophy of science. In the course of this assignment, you will produce an *elevator pitch*, a *script outline*, an *audio draft*, and a “*published*” *podcast*.

In this assignment, you are making an argument, not summarizing what others have written. You will need to provide specific evidence in support of a main idea / claim. You will also exercise organizational, written, oral, and nonverbal communication skills in the process.

You may work on this project on your own or in groups of 2 or 3 people. If you do a group project, everyone will receive the same grade. *More details soon.*

### **Final Project Option: Take-Home Essay Exam**

In lieu of the podcast assignment, you may choose to take an essay exam. When classes end, you will be provided with one or more essay questions / prompts that ask you to synthesize ideas and arguments from the course and craft an argument for a specific claim. You will have approximately one week to complete the exam. Questions will not be provided ahead of time. You will work on this exam on your own; you will not discuss the questions or share notes. These essays will not require outside research. Grading rubrics will be provided in advance.

### **Final Project Option: Class Participation Points**

Your class participation grade will be based on points for the following activities:

**Participation in class discussions** (1 point per class) for high-quality contributions

**Discuss material in class discussion text chat channel on Discord** (1 point per week)  
asynchronous version of class discussion

**Contribute to collaborative note-taking** (1 point per week) Each week there will be a shared note-taking space, where you can earn points for contributing to the note-taking about synchronous class discussion. A good option for those who have trouble speaking on their feet.

**Give thoughtful responses to discussion questions posted on eLearning** (1 point per week) another asynchronous supplement to class discussion

## **Course and Instructor Policies**

### **Class Meeting expectations**

You are expected to have **read the assignments before class**, and it would be to your benefit to also read them again after class. You are expected to have the readings for each day’s class open to refer to during discussion. You are expected to **listen respectfully** to the professor and your fellow students, and **participate** in class discussions and activities.

### **Cheating and Plagiarism**

Don’t do it! If you incorporate any work that is not your own into any project that you do, and you do not cite the source properly, this counts as plagiarism. This includes someone doing the work

for you, taking work done by another student, verbatim copying of published sources, *paraphrasing* published work without citation, and paraphrasing in an inappropriate way even with citation. Re-using work created for another course also counts as plagiarism in most contexts. Unless group work is *explicitly* permitted or required, it is expected that all of the work that you turn in is original and your own, and that any sources that you make use of are correctly cited. If you are caught cheating or plagiarizing, it is absolutely mandatory for me to turn you in to the Dean of Students Office of Community Standards and Conduct.

### **What to Call Me, Other Faculty, and TAs**

I prefer to be called “Matt,” “Matthew,” “Professor Brown,” or “Dr. Brown.” My preferred pronouns are he/him or they/them. For future reference, all faculty members regardless of gender should be referred to by title or degree, “Professor X” or “Dr. X,” unless they specifically tell you otherwise. Visitors to class, teaching assistants, and others who have not obtained a doctoral degree or hold a relevant academic title should be referred to as “Mr. Y” or “Ms. Z,” never using “Miss” or “Mrs,” unless you are explicitly told otherwise.

### **University Policies**

The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus: <http://go.utdallas.edu/syllabus-policies>

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*A syllabus is a living document. This descriptions, timelines, and policies contained in this syllabus are subject to change in the interest of improving the quality of the course, at the discretion of the professor. Adequate notice will be provided for any changes, and in many cases they will be discussed with the class.*